

- 1. Juni 2007

D10a

JP UTILITY MODEL 38-21670 B

Application No. 36-59369
Filing date December 5, 1961
Publication No. 38-21670
Publication date October 17, 1963

Applicant KATO, YOICHI

SPECIFICATION

Title: Elastic Bulging WOVEN FABRIC

Brief Description of Drawings

Fig. 1 shows a cross-sectional profile in transverse direction of a woven fabric of the present invention right after weaving and before bulge-finishing.

Fig. 2 shows a cross-sectional profile in transverse direction of the woven fabric of Fig. 1 after bulge-finishing.

Fig. 3 shows a cross-sectional profile in longitudinal direction of a woven fabric of the present invention right after weaving and before bulge-finishing.

Fig. 4 shows a cross-sectional profile in longitudinal direction of the woven fabric shown in Fig. 3 after bulge-finishing.

Detailed Explanation of Device

In Figs. 1 and 3, a woven fabric 1 after weaving and before bulge-finishing, comprises a front fabric 6 constituted from warp yarns 1 and weft yarns 2, and a back fabric 7 constituted from warp yarns 3 and weft yarns 4, and the front fabric 6 and the back fabric 6 are bonded to each other at bonding points 5.

In Figs. 2 and 4, after bulge-finishing, an air space a is formed between the front fabric 6 and the shrunk back fabric 7 which is constituted from shrunk warp yarns 3' and shrunk weft yarns 4'. The front fabric 6 and the back fabric 7' are bonded at bonding points 7 to each other.

In the device of the present application, both the warp yarns 1 and weft yarns 2 of the front fabric 6 are formed from natural or synthetic filaments or staple fibers having a very low heat shrinkage, either one of warp yarns 3 and weft yarns 4 of the back fabric 7 is synthetic fiber yarn having an extremely high heat shrinkage and the other one of the yarns 3 and 4 is high stretchable yarn in which thermoplastic fibers are utilized, or both of the yarns 3 and 4 contain the above-mentioned fibers mixed together. Accordingly, by applying a scouring or heat treatment, both the warp yarns 3 and the weft yarns 4 of the back fabric are shrunk to provide a shrunk back fabric 7' comprising shrunk yarns 3' and 4', the front fabric 6 and the shrunk fabric 7' are bonded at bonding points 5 to each other to form an air space a between the bulged front fabric 6 and the shrunk back fabric 7'. As

the back fabric 7 has been formed from warp yarns 3 and the weft yarns 4 having a high heat shrinkage or a high stretchability, and then the resultant fabric has been heat shrink-treated, the resultant back fabric exhibits sufficient stability and is characterized by high stretchability under an external force and elasticity. Namely, the back fabric exhibits elasticity in the direction along which the yarns having a high heat shrinkage are arranged and the shrinkage in the direction along which the high stretchable yarns are arranged. The warp yarns 3 and the weft yarns may be appropriately mix-arranged in weaving. In practice, the non-heat treated portions as shown in Fig. 1 and Fig. 3 and the heat treated portions as shown in Fig. 2 and Fig. 4 may be mix-arranged in accordance with a pattern. The resultant two-ply woven fabric has heat-treated portions having a good hand feeling and is useful as a winter garment.

Scope of Claim for Utility Model Registration

A bulging woven fabric structure comprising a front fabric 6 formed from warp yarns 1 and weft yarns each having a low heat shrinkage and a back fabric 7 formed from warp yarns 3 and weft yarns 4 either one of which yarns 3 and 4 consists of synthetic filament yarns or synthetic staple fiber-spun yarns having a high heat shrinkage and the other of which yarns 3 and 4 consists of stretchable yarns having a high elastic force or both of which yarns 3 and 4 consists of the above-mentioned fibers or filaments mixed with each other,

the woven fabric formed from the front fabric and

the back fabric having been scoured and heat-treated so that the resultant fabric exhibits a high stretchability in either one or both of the longitudinal and transverse directions of the fabric.